Poverty and Infantile Mortality in Belfast

Report by The Ulster Society for Economic Research

As we pointed out in the previous report,[1] the chief difficulty in relating health to unemployment in Belfast is the non-coincidence of areas for health purposes with those for unemployment and poor relief. For health statistics the dispensary district is the unit, and for other purposes the ward is the unit.

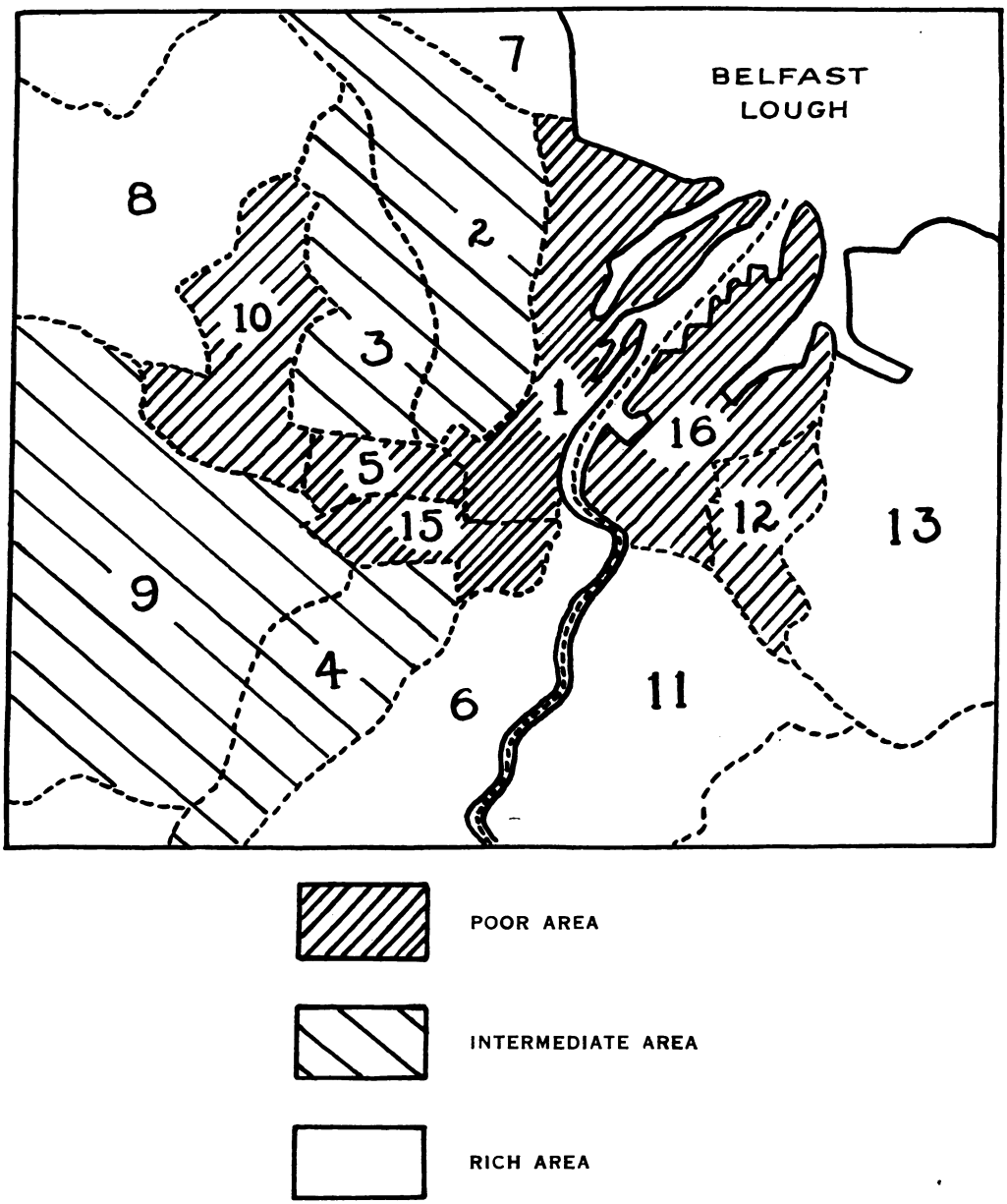
To obviate this difficulty so far as unemployment is concerned, a sample of 4,700 cases was taken, consisting of one-third of the cases on outdoor relief and one-third of those on unemployment assistance in February, 1937. These cases were then divided according to the dispensary district of residence. It was hoped that these figures would give an indication of the relative degrees of poverty in the districts, though what was actually measured is the proportion of extreme poverty and long-standing unemployment. Moreover, boundaries made for the express purpose of dividing rich from poor areas would not coincide with the boundaries of the dispensary districts, and a predominantly rich area is likely to include poor sections. An "index of poverty" was obtained for each dispensary district, defined as three times the sum of the outdoor relief and unemployment cases recorded by the sample, divided by the population of the district as given by the 1937 census, and multiplied by one hundred. These poverty indices vary from 0.9 in Greencastle (district 7) to 5.4 in Central (district 15). The variation of these indices is such that Belfast can be divided conveniently into three groups of dispensary districts, there being a marked and statistically significant difference between the lowest index in one group and the highest index in the lower group each time.

	Dispensary District No.	Name	Poverty Index
Poor Area	15	Central	5.4
	16	Pottinger	5.4
	5	Millfield	5.1
	1	Dock	5.0
	12	Ballymacarrett	4.7
	10	Woodvale	4.4
Intermediate Area	3	Shankill	3.7
	9	Falls	3.4
	2	Duncairn	3.2
	4	Workhouse	2.9
Rich Area	8	Ligoniel	2.1
	6	College	1.8
	11	Ravenhill	1.7
	13	Ballyhackamore	1.3
	7	Greencastle	0.9

A map shows the position of the dispensary districts, with the exception of Ballymachan (14), which is to the east of Ballyhackamore (13). Ballymachan has a population of only 444; there have been only twenty-four births there in the past

BELFAST

DISPENSARY DISTRICTS



nine years, so its figures have been excluded. The poor area consists of the central and dock portions of Belfast, with an extension westwards of the Woodvale district 10 into the intermediate area. This Woodvale district is the district with the lowest poverty index in the poor area; and a big proportion of the cases of poverty occurs in one estate (the Glenard estate). The intermediate area lies to the west of the poor area, whilst the rich area includes the suburbs to the north, east, and south.

As would be expected, the 1926[2] census figures show the rooms per house to be fewer in the poorer districts, and the persons per house greater, so that the variation in the number of persons per room is even more marked. The number of persons per acre is highest in the poor area, even when no allowance is made for space occupied by factories, warehouses, and other buildings which are not dwellings. The crude birth- and death-rates each increase with increasing poverty, but the increase in the birth-rate is by far the most marked. Because of this, the natural rate of increase in population is only 3.6 per thousand in the rich area, though it is 10.7 in the poor area. Yet between 1926 and 1937 the population of the poor area did not increase : it declined by 5.6 per cent. Therefore there must have been a very marked emigration from this area, part of it possibly into the rich area, for there the population increased by 21.6 per cent. over the same period.

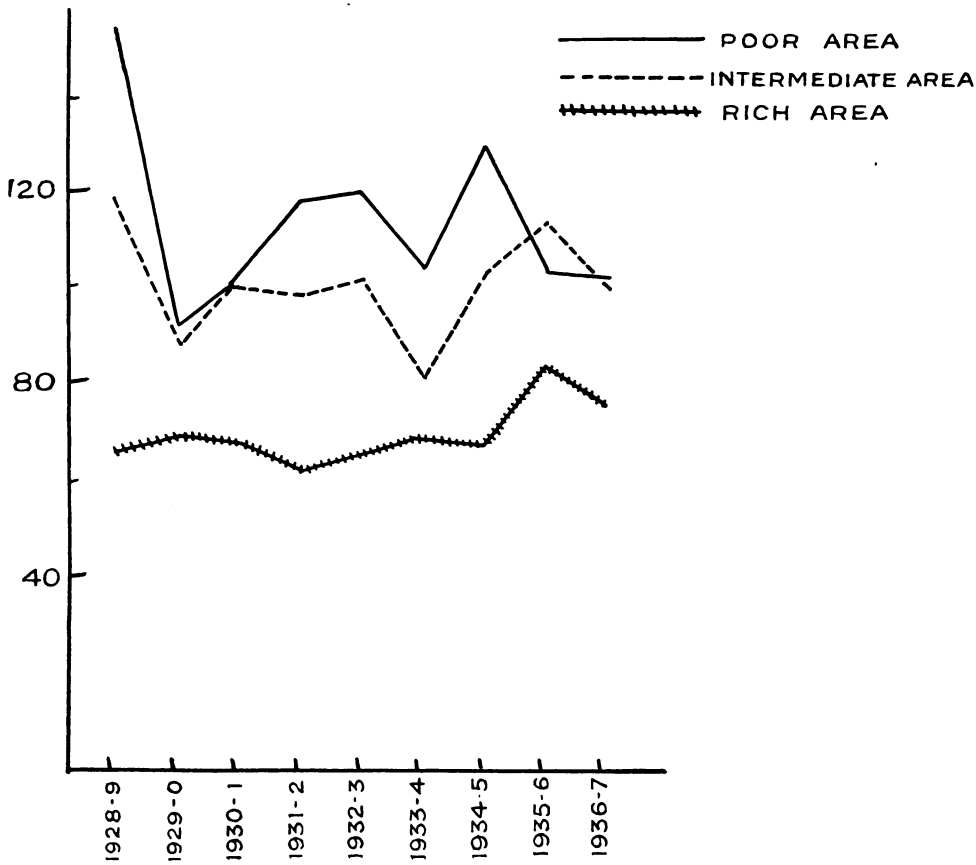
	Poor Area	Inter-mediate Area	Rich Area	Belfast
Poverty index - - - -	4.9	3.3	1.6	3.2
Persons per acre, 1937 - -	56	38	18	30
Population (thousands)—1926 -	133	166	116	415
1937 -	126	172	140	438
Rooms per house, 1926[3] - -	4.20	4.70	5.50	4.77
Persons per house, 1926[3] - -	5.20	4.80	4.50	4.84
Persons per room, 1926 - -	1.24	1.03	0.83	1.02
1936-7, July to June—				
Crude birth-rate - - -	26.6	21.2	16.6	21.3
Crude death-rate - - -	15.9	14.8	13.0	14.5
Natural increase - - -	10.7	6.4	3.6	6.8

Unfortunately, the variations in the death-rates cannot be directly compared, for no statistics of age distributions by dispensary districts have been published by means of which these rates could be standardized.

It seems, therefore, that the most satisfactory measure for comparison is the infantile mortality-rate for the different areas. In 1936-7 (year July to June), the rate for all Belfast was 95 per thousand, in the rich area only 75, and in the intermediate and poor areas slightly over 100 per thousand. The infantile mortality-rate is clearly lower in the rich area, but curiously it is not significantly lower in the intermediate than in the poor area. This is surprising, for the poverty index, as well as the figures of density of population, of birth- and of death-rates, suggest that there is a marked difference in these areas. The figures for 1935-6 confirm the latest figures, for in that year the infantile mortality-rate was actually higher in the

INFANTILE MORTALITY

RATE PER THOUSAND



INFANTILE MORTALITY

Year	Area: Poor	Area: Intermediate	Area: Rich	All Belfast
1928-9	155	120	66	121
1929-30	91	88	71	86
1930-1	103	102	68	95
1931-2	118	99	62	98
1932-3	120	102	66	101
1933-4	104	82	69	87
1934-5	131	103	67	105
1935-6	104	114	84	103
1936-7	103	101	75	95
9 years	114	101	70	99

intermediate than in the poor area. However, in earlier years the poor area has a higher rate than the intermediate area.

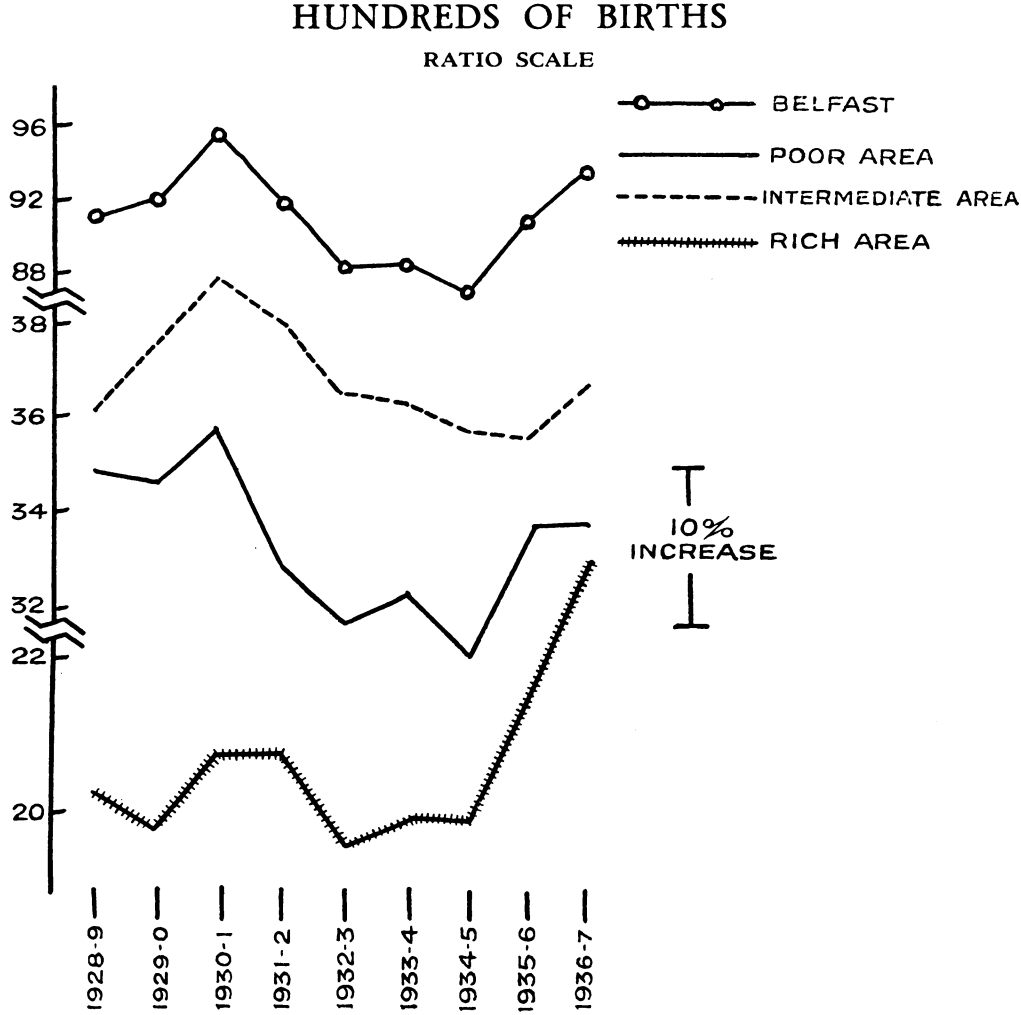
There is another curious feature observable in the figures, which is that the infant mortality-rate has become markedly higher in the rich area during the past two years. From 1928-9 to 1934-5 the rate in this area was remarkably constant, never declining below 62, nor rising above 71, whilst five of the seven values were from 66 to 69 inclusive. Then for 1935-6 the rate suddenly increased to 84, and for 1936-7 remains as high as 75. The change is certainly significant, though it is difficult to say of what it is significant. However, the result has been a lessening of the gap between the infantile mortality-rates of the poor and rich areas in the last two years. This gap averaged 50 per thousand between 1928-9 and 1934-5, but only 24 per thousand in the last two years. The difference was not great in 1929-30 and 1930-1, averaging 27 for the two years. It may be noted that those years, too, were considered to be years of moderately good trade.

A graph shows the infantile mortality-rates for each area during the past nine years, from which it appears that the rate in the rich area has not been influenced at all by the factors which influenced it in the other two areas. In particular, the high figures for 1928-9, the low figures for 1929-30 and for 1933-4, in the intermediate areas, are completely absent from the figures for the rich area. In certain years—1929-30 and 1930-1, 1935-6 and 1936-7, the infantile mortality-rate was as low in the poor area as in the intermediate area, but it was higher from 1931-2 to 1934-5.

1930-1 was a peak year for births in Belfast, and also a peak year for the poor and intermediate districts; in the rich area the peak came in the following year. For the whole city, births were fewest in 1934-5, and following that year there were large increases in births in the poor and rich areas. In the intermediate area the increase did not appear until 1936-7. On examining the figures in greater detail, it is found that the increase in births in the poor area is entirely due to the increase in one dispensary district—in Woodvale (10). In the rich and intermediate areas the increase is more general.

Part of the great increase in births during the past two years in the rich area might be explained by the increase in population. It might be supposed also that the increased infantile mortality was due to an influx of people from the poorer areas, bringing with them from those poorer areas their liability to high infantile mortality. However, in detail, the areas showing the increased number of births are not those showing the increased infantile mortality-rates. (But when births are increasing rapidly, the figure calculated for infantile mortality is lower than the true figure.) Thus the most marked increase in births has been in Ligoniel, Greencastle, and Ballyhackamore (districts 8, 7, and 13), whilst the increase in infantile mortality has been in Ravenhill and Ligoniel (11 and 8), and for the one year 1935-6 in College (6).

The conclusions to be drawn are that infant life is much safer in the richer third of Belfast, where it is insulated from the factors which make the infantile mortality-rate higher, and make it fluctuate more violently in the other parts. But this richer



NUMBER OF BIRTHS

Year	Area: Poor	Area: Intermediate	Area: Rich	All Belfast*
1928-9	3472	3605	2026	9104
1929-30	3445	3747	1976	9172
1930-1	3557	3924	2072	9561
1931-2	3300	3811	2078	9190
1932-3	3163	3662	1955	8782
1933-4	3226	3616	1981	8827
1934-5	3105	3565	1978	8651
1935-6	3347	3554	2146	9047
1936-7	3351	3656	2335	9343
9 years	29966	33140	18547	81677

* Including dispensary district 14, Ballymachan.

area in the past two years has presented a problem, because its infant life has become less safe. The factors which caused such a reduction of births after 1931 had little influence in the rich area; and it is in this area that the recovery in the number of births since 1934 has been most marked. These features may be partly due to the increasing population of the rich area, though it is not clear that the increased infantile mortality is connected with this factor. In the poorer two-thirds of Belfast the degrees of poverty do not appear now to be directly correlated with infantile mortality; though when the depression was worse, infantile mortality was higher in the area now classified as "poor" than in that classified as "intermediate." It may be that the concentration of health services upon the most markedly poor areas has made these areas as safe for infants as the intermediate areas.

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REFERENCES.

1. *Ulster Medical Journal,* April, 1937.
2. Figures for 1937 not yet being available, though provisional figures of the Registrar-General show that for all Belfast there has been a marked improvement in the number of persons per house and per room. Some improvement appears to have been made in each area.
3. Exact figures are not computable for the individual areas.

Voluntary Institutions' Administration To-day

By DOUGLAS BOYD, M.B., D.M.R.E. CANTAB.

Hon. Radiologist, Mater Infirmorum Hospital, Belfast Hospital for Sick Children, The Benn Hospital.

Opening Address to the Medical School, Mater Infirmorum Hospital, Belfast

I AM TOLD that as a child I talked early, and with considerable fluency, quite unembarrassed by any suspicion of self-consciousness.

This was a childish characteristic which I regret that I lost at a comparatively early age, and when six odd weeks or so ago I optimistically promised to address you at this opening meeting of the hospital session, my pride was effectively tempered by the realisation that I would have to stand before you and say something that at least sounded intelligent.